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PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q64167

Kazunaga SUZUKI

Appln. No.: 09/836,284

Allowed: September 24, 2003

Confirmation No.: 5459

Group Art Unit: 2853

Filed: April 18, 2001

Examiner: Ly T. Tran.

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For: INK JET RECORDING APPARATUS

INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §§ 1.97 and 1.98

MAIL STOP ISSUE FEE

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached PTO/SB/08 A & B (modified) form and/or listed herein and which the Examiner may deem material to patentability of the claims of the above-identified application.

One copy of each of the listed documents is submitted herewith.

The present Information Disclosure Statement is being filed: (1) No later than three months from the application's filing date; (2) Before the mailing date of the first Office Action on the merits (whichever is later); or (3) Before the mailing date of the first Office Action after filing a request for continued examination (RCE) under § 1.114, and therefore, no Statement under 37 C.F.R. § 1.97(e) or fee under 37 C.F.R. § 1.17(p) is required.

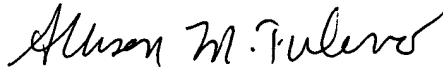
INFORMATION DISCLOSURE STATEMENT
U.S. Appln. No.: 09/836,284

In compliance with the concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents, Applicant encloses herewith a copy of a Communication from a foreign patent office in a counterpart application citing such documents, together with an English-language version of at least that portion of the Communication indicating the degree of relevance found by the foreign patent office.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,



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WASHINGTON OFFICE

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CUSTOMER NUMBER

Date: March 9, 2004

English-language version of at least that portion of the Communication indicating the degree of relevance found by the foreign patent office:

D1: 9-193378A
D2: 7-290720A
D3: 9-29996A
D4: 11-192723A
D5: 5-318718A
D6: JP 60-248357A
D7: JP 9-226116A

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The Japanese Examiner asserts that:

D1 teaches that a plurality of preliminary ejections (e1-e3) and one subsequent application of inversed voltage (r1) are performed at a cycle identical with a printing cycle during a time period T1 as a unit operation, in a case where a printer is left for a long time.

D1 further teaches that several to several tens times of the above unit operation are performed, and an interval between r1 and next e1 is longer than the printing cycle (cf., description [0040] and Fig. 2).

D2 teaches that an ejection frequency of preliminary ejections are gradually increased (cf., descriptions [0032]-[0040]).

D3 teaches that a meniscus of ink in a nozzle orifice is vibrated every time when one main scanning recording is finished, and a refresh signal for ejecting viscous ink is applied when a predetermined number of main scanning recordings are finished (cf., descriptions [0027]-[0033]).

D4 teaches that the number of preliminary ejections is varied in accordance with the length of a standby state of a printer (cf., descriptions [0058]-[0059]).

D5 teaches that the degree of one recovery operation for recovering ejection failure and the number of recovery operations repeated are determined in accordance with the length of a standby state of a printer (cf., description [0010]).

D6 teaches that the relationship between an ink viscosity and the length of a standby state of a printer depends on characteristics of the ink (cf., page 5, upper left column lines 15-20).

D7 discloses a circuit for generating plural kinds of drive waveforms to be applied to a piezoelectric element, and a drive circuit for selectively outputting one of the drive waveforms to the piezoelectric element (cf., description [0009]).